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PATENT

Attorney's Docket No. 034423/237429

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Gillespie et al.
Appl. No.: 09/921,323
Filed: August 2, 2001
For: SPUNBOND NONWOVEN FABRICS FROM RECLAIMED
POLYMER AND THE MANUFACTURE THEREOF

Confirmation No.: 5051
Group Art Unit: 1771
Examiner: Jennifer Boyd

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Commissioner for Patents
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicant requests review of the final rejection in the above-identified application pursuant to the pilot program stated in the OG Notice of July 12, 2005. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Respectfully submitted,

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CERTIFICATION OF FACSIMILE TRANSMISSION

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Janet F. Sherrill
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October 19, 2005
Date

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REMARKS

The Examiner has failed to establish a *prima facie* case of obviousness. Please refer to the response filed on February 7, 2005 and the detailed arguments presented thereon regarding the deficiencies in the rejection. The Examiner's response to these arguments, as set forth in the Final Rejection of July 22, 2005, does not cure these deficiencies.

The Prior Art Does Not Teach All of the Claimed Limitations

As recognized by the Examiner, the Taylor reference does not teach or suggest using reclaimed polypropylene in a process for producing spunbond nonwoven fabric. Moreover, neither Taylor, nor any of the other the prior art of record, teaches or suggests this concept which is at the center of applicant's invention.

The Kent reference is not at all concerned with producing a spunbond nonwoven fabric. Rather, Kent is directed to an entirely different technology – producing carpet yarn. The production of carpet yarn and the manufacture of a spunbond nonwoven fabric are similar only in that they both involve producing meltspun fibers. They are quite different in other respects, including the processing steps involved and the specific problems presented. The Kent teaching is specifically with reference to carpet yarns and to a specific condensation polymer, nylon 6. The Kent reference does not contain any teaching or suggestion with regard to reclaimed polypropylene. Nor does Kent contain any teaching with regard to bicomponent filaments of a spunbond nonwoven fabric. It certainly contains no teaching or suggestion of providing reclaimed polypropylene in the core of a sheath core filament of a spunbond nonwoven fabric.

Furthermore, independent claims 1, 7 and 10 specify specific sequences of process steps that result in the production of a spunbond nonwoven fabric containing reclaimed polypropylene. While the Taylor reference describes some of those steps, there is nothing in the cited prior art to cause the skilled artisan to use the specific sequence of steps as claimed in manufacturing a spunbond nonwoven fabric with sheath-core bicomponent filaments, where the reclaimed polypropylene is present in the core component at 25 percent by weight or greater.

Therefore, it is clear that neither Taylor nor Kent, nor any combination of these two patents, teach all of the limitations of the invention as claimed in independent claims 1, 7 and 10 or in the other claims of record.

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The subject matter of the claimed invention can only be arrived at from the Taylor and Kent references through a rather substantial extrapolation from what is taught by Kent. It is necessary to stretch or extend the Kent teachings, which as noted earlier are for a specific polymer (nylon 6) and for a specific technology (carpet yarn production), and to conclude that the teachings are of universal applicability and readily transferable to any virtually any polymer and to virtually any other kind of fiber spinning technology. There are untold numbers of different fiber-forming polymers, and there are also a large number of distinctly different fiber spinning technologies. The Examiner has put forth no cogent reasons why it is reasonable to expect that the Kent teachings would be applicable to all polymers and to all fiber spinning technologies in general, or to polypropylene in a bicomponent spunbond process in particular.

There is no suggestion or motivation to modify the references

The process used by Kent for producing carpet yarn is fundamentally different from a spunbond nonwoven fabric process such as that described in the Taylor reference. Among the significant differences are the following:

- Kent produces carpet yarn, not a spunbond nonwoven fabric.
- In the Kent process, individual filaments are extruded, quenched, combined into a yarn, and wound up. The yarn is subsequently unwound, drawn and texturized. In a spunbond process such as that of Taylor, individual filaments are extruded into a quench chamber, pneumatically drawn and attenuated, deposited onto a collection surface to form a web, and subsequently bonded, all in a continuous operation. The filaments remain separate from one another and are never combined into a yarn.
- The carpet yarn contains 58 filaments that are combined to form a yarn. (Kent example 1). The nonwoven fabric contains thousands of individual filaments, e.g. 3000-6000 per meter of width (Taylor Col. 3 lines 30-34).
- Filaments of a carpet yarn are considerably larger than filaments in a spunbond nonwoven fabric. Kent states that carpet fibers are preferably from about 15-28 dpf. By contrast, the filaments of a spunbond nonwoven web are considerably finer, typically on the order of up to about 3 dpf.
- The spinning speeds of a spunbond process are greater than those used in the manufacture of carpet yarn.

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- Kent is dealing with a condensation polymer, a polyamide, namely nylon 6. The Taylor reference uses a polyolefin addition polymer, namely polypropylene.

In the spunbond process, because the filaments are relatively fine and are attenuated pneumatically in a continuous operation, breakage of individual filaments in the attenuation and filament deposition step can have serious undesirable consequences. Any individual filaments that break can wrap around the rolls used to compress the web as it travels along the belt, or they can wrap around the calender rolls used for bonding the filaments of the web (See the rolls 44 in Figure 1). Such filament wraps are a significant problem and require shutting down the entire spunbond line so that the filament wraps can be manually removed from the rolls. Even if a broken filament does not form a filament wrap, it will produce a defect in the spunbond nonwoven fabric. These problems are well known to persons of ordinary skill in the art of producing spunbond nonwoven fabrics.

The problem of filament breakage is not as severe in a carpet yarn process, since the individual filaments are consolidated into a yarn, and thus an individual broken filament would simply be carried along with the other unbroken filaments of the yarn without disrupting the process. In addition, the filaments of a carpet yarn are typically much larger in diameter than the filaments of a spunbond nonwoven web, lessening the filaments breakage issue. Also, the larger filament size contributes to the ability to incorporate contaminants into the core. While it might be possible to incorporate significant quantities of contaminants in the core component of a bicomponent nylon 6 carpet yarn filament, as taught by Kent, persons of ordinary skill in the art of producing spunbond nonwoven fabrics, who are aware of the fundamental differences between the processes and the problems outlined above that are specific to the spunbond process, would not consider the Kent teachings to be translatable to the production of polypropylene filaments in a spunbond nonwoven process. There are simply too many differences in the processes and in the behavior of the different polymers. For these reasons, the person of ordinary skill in spunbond nonwovens technology would not consider the carpet yarn technology as being an analogous art.

Therefore, the proposed combination of the Taylor and Kent references lacks the necessary motivation required to establish a *prima facie* case of obviousness.

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No Expectation of Success

Because of the fundamental differences between a spunbond process and a carpet yarn process, as outlined above, persons of skill in the art who are familiar with spunbond technology would not consider carpet yarn technology to be an analogous art. Persons skilled in the art would not have any reason to expect that a technology that can be successfully employed in nylon carpet yarn production could be translated to a process for manufacturing polypropylene spunbond nonwoven fabric. /The spunbond nonwoven manufacturing process presents problems, such as filament breakage and calender roll wraps, that are unique to the spunbond process. Furthermore, the fact that a contaminant-containing nylon may have been successfully incorporated into the core of a nylon carpet yarn, as taught by Kent, says nothing about whether this could be successfully implemented in a spunbond process using an entirely different polymer, polypropylene. The Examiner's justification for this change in polymer composition "that both types of polymers are commonly used in the art" is inadequate and not grounded in fact or in law. Commonly used in which art? For these reasons, the rejection also lacks the second requisite of establishing a *prima facie* case of obviousness.

The use of hindsight is improper

The Taylor and Kent references themselves contain no specific teachings that would incite someone to modify the Taylor process so that reclaimed polypropylene is present in the core of the filaments. Applicant has shown above that the person of ordinary skill in the art would not, either from the reference itself or from the knowledge generally available to one of ordinary skill, be motivated to make this modification, and moreover, this person of ordinary skill would have no reasonable expectation of success.

Assuming that some reasonable motivation existed for modifying the Taylor process in light in the Kent teachings, this modification should lead to placing Kent's contaminant containing nylon 6 polymer into the core of the Taylor bicomponent filaments. However, in order to arrive at applicant's claimed invention, it is necessary to take Kent's specific teaching with respect to nylon 6 and to apply it to an entirely different polymer – polypropylene.

From the foregoing, it should be evident that a hindsight reliance upon applicant's own disclosure is the only conceivable basis why one would combine the Taylor and Kent references in the manner set forth in the rejection. This is not a proper basis for an obviousness rejection.

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Conclusion

Applicant has clearly shown that the requirements for establishing a *prime facie* case of obviousness under 35 U.S.C. §103 have not been met. Accordingly, the obviousness rejection should be withdrawn.

The Examiner has previously withdrawn a Final Rejection to apply new prior art. It is therefore believed that there has been a sufficient opportunity to develop the prior art for this application. Therefore, upon the withdrawal of the Final Rejection, the application should be allowed with the claims of record.